Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1.   (Currently Amended) A method of establishing at least two node-disjoint paths comprising:

establishing, by a source node, a first directed path, having direction based path segments, from a the source node to a target node;

establishing, by the source node, a second directed path, having direction based path segments, from thea source node to thea target node;

merging, by the source node, the first and second directed paths into a merged path; and

dividing, by the source node, the merged path into a third and a fourth node-disjoint directed paths between the source node and the target node.

2.   (Currently Amended) The method of claim 1, wherein establishing the first directed path includes utilizing either a Generic Route Discovery Procedure or the a Dynamic Source Routing protocol.

3.   (Currently Amended) The method of claim 2, wherein establishing the second directed path includes utilizing thea Generic Route Discovery Procedure.

4.   (Original) The method of claim 3, wherein utilizing the Generic Route Discovery Procedure includes:

broadcasting a route request;

broadcasting information about the first directed path with the route request;

forwarding the route request via receiving nodes until the request is received by the target node;

building the second directed path having path segments utilizing the path segments that the route request has traveled; and

preventing the second directed path from including directed path segments found in the first directed path.

5.   (Currently Amended) The method of claim 1̲3, wherein establishing the first directed path and establishing the second directed path each include
        broadcasting an on-demand flooding route request.

6.   (Currently Amended) The method of claim 1̲4, wherein establishing the first directed path and establishing the second directed path occur substantially simultaneously.

7.   (Currently Amended) The method of claim 1, wherein merging the first and second directed paths into a the merged path includes:
        adding the first directed path to the second directed path in such a manner that the direction based path segments of opposite direction are removed from the merged path.

8.   (Original) The method of claim 7, wherein adding the first directed path to the second directed path includes utilizing a substantially vector based addition.

9.   (Currently Amended) The method of claim 7, wherein adding the first directed path to the second directed path includes:
        determining if two path segments are between the same nodes but of opposite direction;
        if so, removing both path segments from the merged path; and
        repeating the determination and removal until all such paths segments are removed from the merged path.

10.   (Currently Amended) The method of claim 1, wherein merging the first and second directed paths into a the merged path includes:
        adding the first directed path to the second directed path to form a closed

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polygon;

    removing any interior path segments from the closed polygon; and

    wherein the merged path is the exterior path segments of the closed polygon.

11.   (Currently Amended) The method of claim 10, wherein dividing the merged path into a~the third and a~the fourth node-disjoint directed paths includes:

    determining which path segments of the closed polygon would be traversed if a transmission occurred between the source node and the target node in a clock-wise direction;

    making the third path the clock-wise path segments; and

    making the fourth path the counter-clock wise path segments.

12.   (Currently Amended) The method of claim 11, wherein dividing the merged path into a~the third and a~the fourth node-disjoint directed paths includes:

    creating the third path utilizing a first portion of the path segments from the first directed path and a first portion of the path segments from the second directed paths; and

    creating the fourth path utilizing a second portion of the path segments from the first directed path and a second portion of the path segments from the second directed paths.

13.   (Original) The method of claim 1, wherein the two-node disjoint paths include both wireless path segments and wired path segments.

14.   (Currently Amended) A source node comprising:

    a transceiver to transmit and receive a wireless signal;

    a path generator to establish at least a first plurality of paths of communication, utilizing at least in part a~the wireless signal, between the source

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node and a target node;

a path organizer to arrange ~~a~~ the first plurality of paths generated by the path generator into a second plurality of paths that are node disjoint.

15. (Currently Amended) The source node of claim 14, wherein the path generator is ~~capable of~~further to ~~generating~~ generate a first directed path and a second directed path, each directed path having direction based path segments.

16. (Currently Amended) The source node of claim 15, wherein the path generator is ~~capable of~~further to ~~generating~~ generate a path utilizing a Generic Route Discovery Procedure.

17. (Currently Amended) The source node of claim 14, wherein the path generator is ~~capable of~~further to ~~generating~~generate:

~~the~~ a first path utilizing ~~a~~ the Generic Route Discovery Procedure utilizing an empty reference path, and

~~the~~ a second path utilizing ~~a~~ the Generic Route Discovery Procedure utilizing the first path as the reference path.

18. (Currently Amended) The source node of claim 14, wherein the path generator is ~~capable of~~further to generating~~e~~ ~~the~~ a second path via:

broadcasting a route request;

broadcasting information about ~~the~~ a first directed path with the route request;

directing receiving nodes to forward the route request via receiving nodes until the request is received by the target node;

directing receiving nodes to build ~~the~~ a second directed path having path segments utilizing the path segments that the route request has traveled; and

directing receiving nodes to prevent the second directed path from including directed path segments found in the first directed path.

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19.   (Currently Amended) The source node of claim 18, wherein the path generator is ~~capable of~~further to:

    establish~~ing~~ the first and second paths substantially simultaneously.

20.   (Currently Amended) The source node of claim 14, wherein the path organizer is ~~capable of~~further to:

    combin~~ing~~e the first plurality of paths into a merged path, and

    divid~~ing~~e the merged path into ~~a~~the second plurality of paths that are node disjoint.

21.   (Currently Amended) The source node of claim 20, wherein the first plurality of paths, includes a plurality of directed paths, each directed path having direction based path segments; and

    wherein the path organizer is capable of combining the first set of paths into ~~a~~the merged path via adding the first set of paths together, such that path segments of opposite directions cancel out.

22.   (Currently Amended) The source node of claim 21, wherein the path organizer is ~~capable of~~further to combin~~ing~~e the first set of paths into ~~a~~the merged path utilizing a substantially vector based addition.

23.   (Currently Amended) The source node of claim 21, wherein the path organizer is ~~capable of~~further to:

    determin~~ing~~e if two path segments are between the same nodes but of opposite direction;

    if so, ~~removing~~remove both path segments from the merged path; and

    repeat~~ing~~ the determination and removal until all such paths segments are removed from the merged path.

24.   (Currently Amended) The source node of claim 20, wherein the first plurality of paths, includes a plurality of directed paths, each directed path having

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direction based path segments; and wherein the path organizer is ~~capable~~ ~~of~~further to:

    graphically adding the first plurality of paths together to form a closed polygon;

    removing any interior path segments from the closed polygon;

    wherein the merged path is the exterior path segments of the closed polygon; and

    dividing the merged path into a second plurality of node disjoint paths.

25.   (Currently Amended) The source node of claim 14, wherein the transceiver is ~~capable of~~ further to sending a~~the~~ wireless signal to a the target node utilizing any one of the paths of the second plurality of paths that are node disjoint.

26.   (Currently Amended) An article of manufacture comprising:

    a storage medium; and

    ~~having~~ a plurality of machine accessible programming instructions stored on the storage medium and configured to program a node to, ~~wherein when the~~ ~~instructions are executed, the instructions provide for:~~

        establishing a first directed path, having direction based path segments, from a source node to a target node;

        establishing a second directed path, having direction based path segments, from the~~a~~ source node to the~~a~~ target node;

        merge~~ing~~ the first and second directed paths into a merged path; and

        divide~~ing~~ the merged path into a third and a fourth node-disjoint directed paths.

27.   (Currently Amended) The article of claim 26, wherein the programming instructions ~~providing for~~ are configured to establishing the first directed path, and said establishing the first directed path further includes ~~instructions providing~~

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for~~for~~ utilizing either a Generic Route Discovery Procedure or ~~the~~ a Dynamic Source Routing protocol.

28.   (Currently Amended) The article of claim 27, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> establish~~ing~~ the second directed path<u>,</u> <u>and said establishing</u> the second directed path further includes ~~instructions~~ ~~providing for~~ utilizing ~~a~~ <u>the</u> Generic Route Discovery Procedure.

29.   (Currently Amended) The article of claim 28, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> ~~utilizing~~<u>utilize</u> the Generic Route Discovery Procedure<u>, and said utilizing</u> includes ~~instructions providing for~~:
        broadcasting a route request;
        broadcasting information about the first directed path with the route request;
        forwarding the route request via receiving nodes until the request is received by the target node;
        building the second directed path having path segments utilizing the path segments that the route request has traveled; and
        preventing the second directed path from including directed path segments found in the first directed path.

30.   (Currently Amended) The article of claim ~~28~~<u>26</u>, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> establish~~ing~~ the first directed path and establish~~ing~~ the second directed path<u>, and said establishing the first directed</u> <u>path and said establishing the second directed path</u> each <u>further</u> include ~~instructions providing for~~:
        broadcasting an on-demand flooding route request.

31.   (Currently Amended) The article of claim ~~29~~<u>26</u>, wherein <u>the programming</u> <u>instructions are further configured to program the node to perform said</u>

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establishing the first directed path and <u>said</u> establishing the second directed path ~~occur~~ substantially simultaneously.

32.   (Currently Amended) The article of claim 26, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> ~~merging~~<u>merge</u> the first and second directed paths into ~~a~~<u>the</u> merged path<u>, and the merging further</u>~~includes instructions providing for~~:
        adding the first directed path to the second directed path in such a manner that the direction based path segments of opposite direction are removed from the merged path.

33.   (Currently Amended) The article of claim 32, wherein the <u>programming</u> instructions ~~providing for~~<u>are further configured to</u> ~~adding~~ the first directed path to the second directed path<u>, and the adding further</u> includes ~~instructions providing for~~<u>utilizing</u> a substantially vector based addition.

34.   (Currently Amended) The article of claim 32, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> ~~adding~~ the first directed path to the second directed path<u>, and the adding further</u> includes ~~instructions providing for~~:
        determining if two path segments are between the same nodes but of opposite direction;
        if so, removing both path segments from the merged path; and
        repeating the determination and removal until all such paths segments are removed from the merged path.

35.   (Currently Amended) The article of claim 26, wherein the <u>programming</u> instructions ~~providing for~~<u>are configured to</u> ~~merging~~<u>merge</u> the first and second directed paths into ~~a~~<u>the</u> merged path<u>, and the merging</u> includes ~~instructions providing for~~:
        adding the first directed path to the second directed path to form a closed polygon;

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removing any interior path segments from the closed polygon; and

wherein the merged path is the exterior path segments of the closed polygon.

36. (Currently Amended) The article of claim 35, wherein the ~~programming~~ instructions ~~providing for~~are configured to ~~dividing~~ divide the merged path into ~~a~~ the third and ~~a~~ the fourth node-disjoint directed paths, and the dividing further includes ~~instructions providing for~~:

determining which path segments of the closed polygon would be traversed if a transmission occurred between the source node and the target node in a clock-wise direction;

making the third path the clock-wise path segments; and

making the fourth path the counter-clock wise path segments.

37. (Currently Amended) The article of claim 36, wherein the ~~programming~~ instructions are configured to ~~providing for~~ ~~dividing~~ divide the merged path into ~~a~~ the third and ~~a~~ the fourth node-disjoint directed paths, and the dividing further includes ~~instructions providing for~~:

creating the third path utilizing a first portion of the path segments from the first directed path and a first portion of the path segments from the second directed paths; and

creating the fourth path utilizing a second portion of the path segments from the first directed path and a second portion of the path segments from the second directed paths.

38. (Original) The article of claim 26, wherein the two-node disjoint paths include both wireless path segments and wired path segments.

39.-61. (Cancelled)